Sustaining Readiness through Healthy Communities

Deployment Surveillance Update 2005

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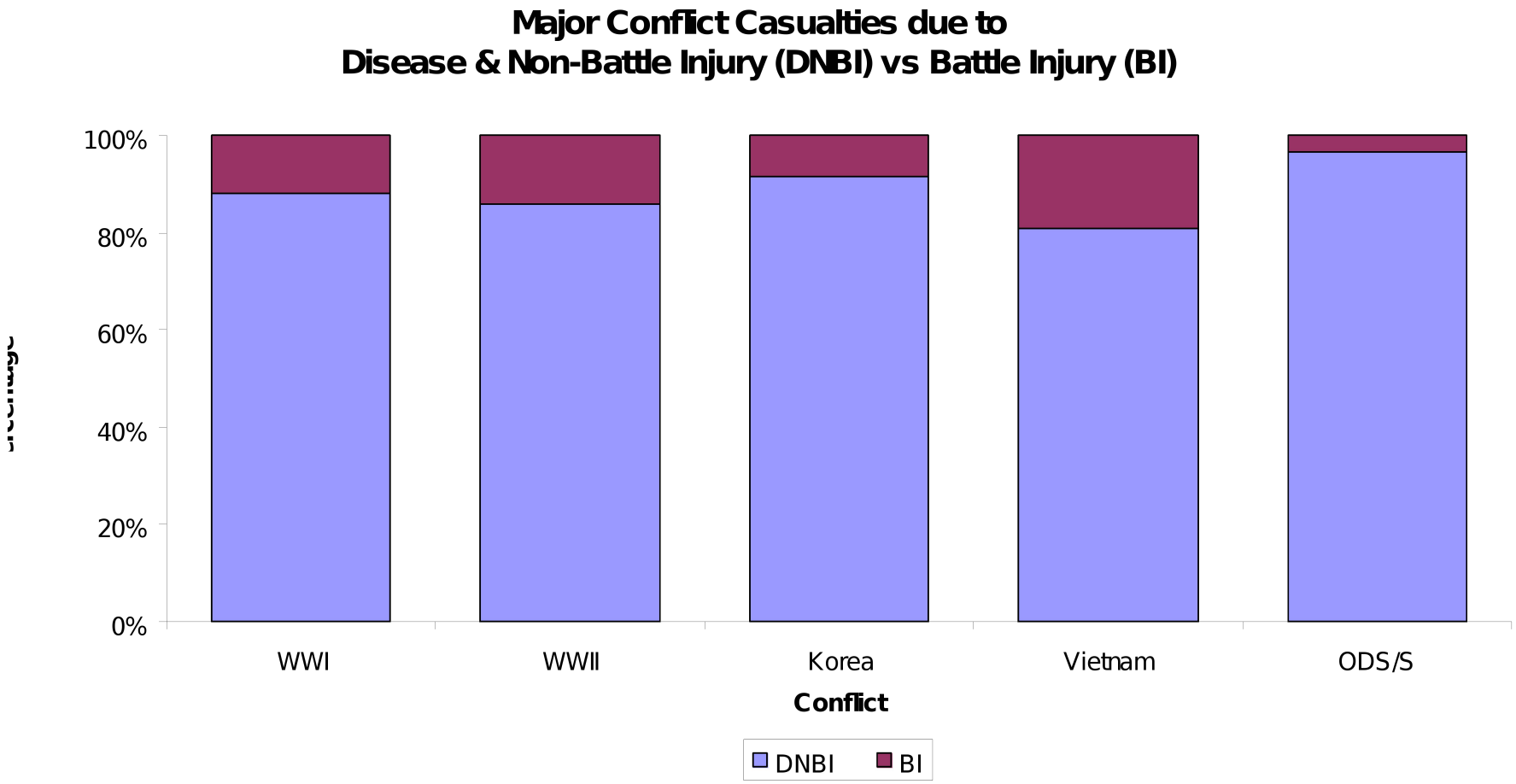
AFIOH
Air Force Institute for Operational Health

ies

Outline

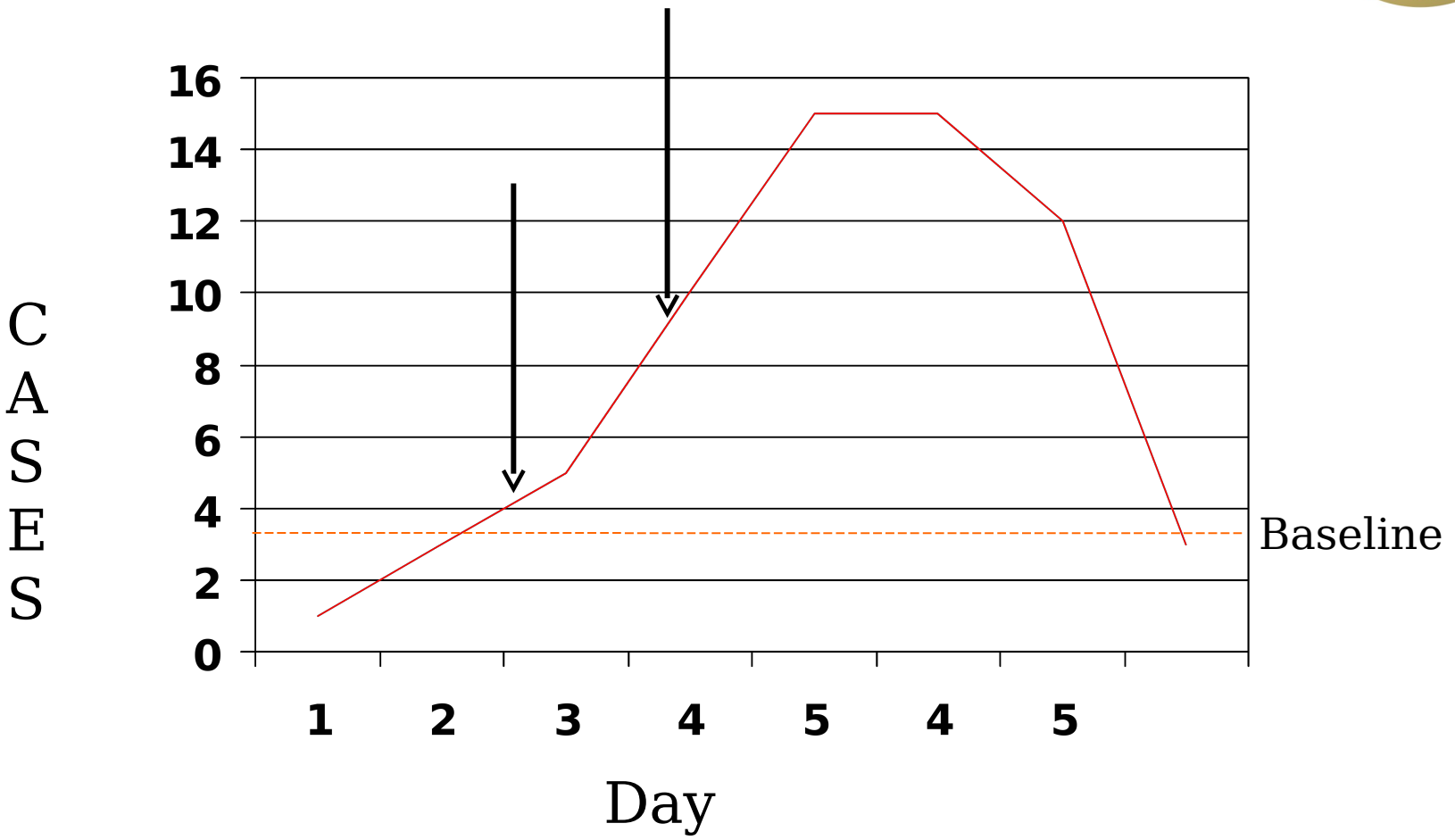
- Drivers
- Historical Background
- Disease Non-Battle Injury (DNBI) Reporting
- Analyses on site
- Wrap up
- Operational Issues

History


Major Conflict Casualties due to
Disease & Non-Battle Injury (DNBI) vs Battle Injury (BI)
100%
80%
60%
40%
20%
0%
WWI
WWII
Korea
Vietnam
ODS/S
Conflict
DNBI
BI

Surveillance in a Deployed Setting

Why bother?


CASES
16
14
12
10
8
6
4
2
0
1
2
3
4
5
4
5
Day
Baseline

Gulf War Syndrome

- "…fatigue, memory loss, skin rashes, muscle and joint pains, head aches, and other health issues."
- " …attribute most of these symptoms to known medical conditions…"
- "…no unifying diagnosis could be found."
- "…unlikely that a single precipitating agent or event…will be identified…"
- "…unlikely that veterans…contracted a unique, previously unrecognized syndrome."

Health Consequences of the Gulf War, Military and Veterans Health Coordinating Board, December 2000

Gulf War Syndrome

- Lessons Learned
  - Who, where, when?
  - Medical encounters in-theater?
  - Medical diagnoses in-theater?
  - Environmental exposures?

Deployment Surveillance Drivers

Presidential Review Directive/NSTC – 5, *A National Obligation. Planning for Health Preparedness for and Readjustment of the Military, Veterans, and Their Families after Future Deployments, August 1998*

- **Minimize/prevent post-conflict health issues**
  - **Risk communication**
  - **Health & exposure data collection**
  - **Coordinated research programs**
  - **Improve healthcare delivery**

Deployment Surveillance Drivers

DoD Directive 6490.2, 30 August 1997
Joint Medical Surveillance

- **All Service members mission capable**
- **Surveillance before, during, and after deployments**
- **Career follow-up to assess deployment health effects**
- **Risk communication before and during deployments**
- **Monitor environmental, occupational, epidemiologic threats**
- **Assess DNBI, stress casualties, combat casualties**
- **Enforce effective countermeasures, optimal medical care**

Additional Guidance, DoD Instruction 6490.3, 7 August 1997, *Implementation and Application of Joint Medical Surveillance for Deployments*

Working Guidance

JCS Memorandum MCM-006-02, 1 February 2002, *Updated Procedures for Deployment Health Surveillance and Readiness*

- **Mandates use of weekly DNBI report for deployments**
- **Provides case definitions for DNBI categories**
- **Provides examples**

Working Guidance

- **Deployment Defined**
  - **JCS or Unified Command deployment order delivered**
  - **More than 29 continuous days**
  - **Land-based location outside the US**
  - **No permanent US MTF present**
  - **Applies to Activated Reserve Components regardless of location (HA Policy:01-017)**

Working Guidance

HQ USAF/SG Memo, May 2003, *Medical Procedures for Deployment Health Surveillance*

1. **Pre Deployment Requirements at Home Station**
2. **Requirements for Medical Personnel at Deployed Locations**
   - **Medical encounters, exposures, medications**
3. **Requirements for Post-Deployment Processing at Home Station**

Historic DNBI Rates

DNBI Category	DNBI Rate per 1,000 Personnel per Week						
	ODS/S[1]	OJE[1]	OJG[2]	War Phase[3]		Stabilization Phase[4]	
				OEF	OIF	OEF	OIF
Dermatologic	9.3	7.2	9.2	6.6	6.1	4.5	4.5
GI, Infectious	8.7	4.5	4.5	7.2	3.4	4.3	3.1
Respiratory	10.4	10.0	20.9	9.9	10.4	6.3	5.0
Total Injury	11.9	19.5	21.9	14.2	9.6	14.4	10.5
Total DNBI	64.8	70.9	81.2	57.3	51.9	50.8	39.3

[1] Sanchez, Craig, Kohlhase, et al. Mil Med 2001;166:470-4.

[2] McKee, Kortepeter, Ljaamo. Mil Med 1998;163:733-42.

[3] 15 March 2003 – 3 May 2003.

[4] 4 May 2003 – 08 January 2005.

OEF/OIF DNBI Rates

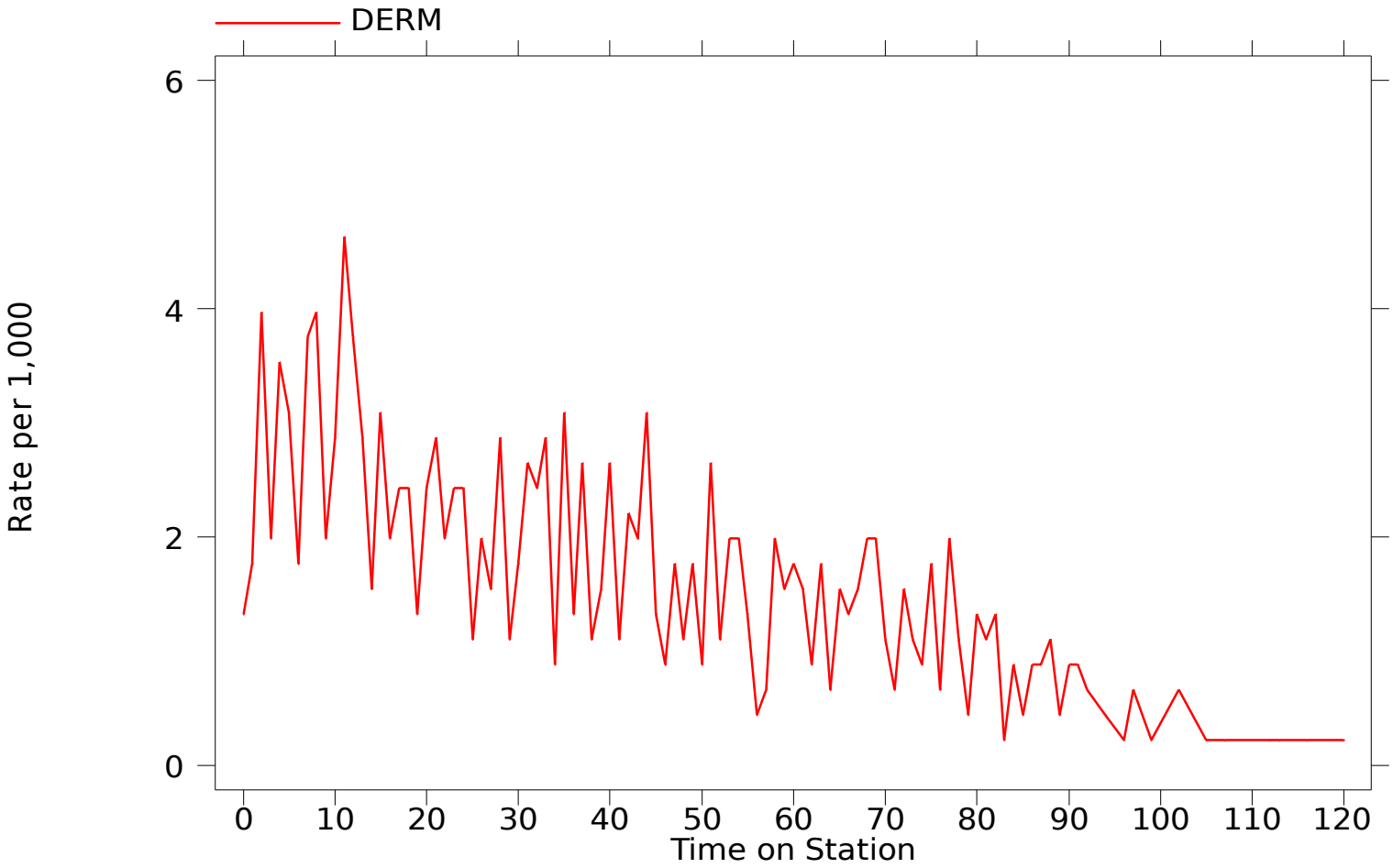
DNBI Category	OEF	OIF
All Other Med/Surg	12.6	13.9
Resp	5.4	6.5
Injury Work/Train	4.8	6.1
Derm	4.6	4.7
Injury Other	3.9	6.2
GI	3.1	4.5
Ophth	1.2	2.4
Injury Sports	1.3	1.8
Psych	0.6	2.8
Gyn	1	0.6
Injury MVA	0.3	0.3
Heat/Cold	0.4	0.2
Combat Stress	0.5	0.5
Fever	0.2	0.4
STD	0.1	0.3

CENTCOM data, 15 March 2003- 8 January 2005

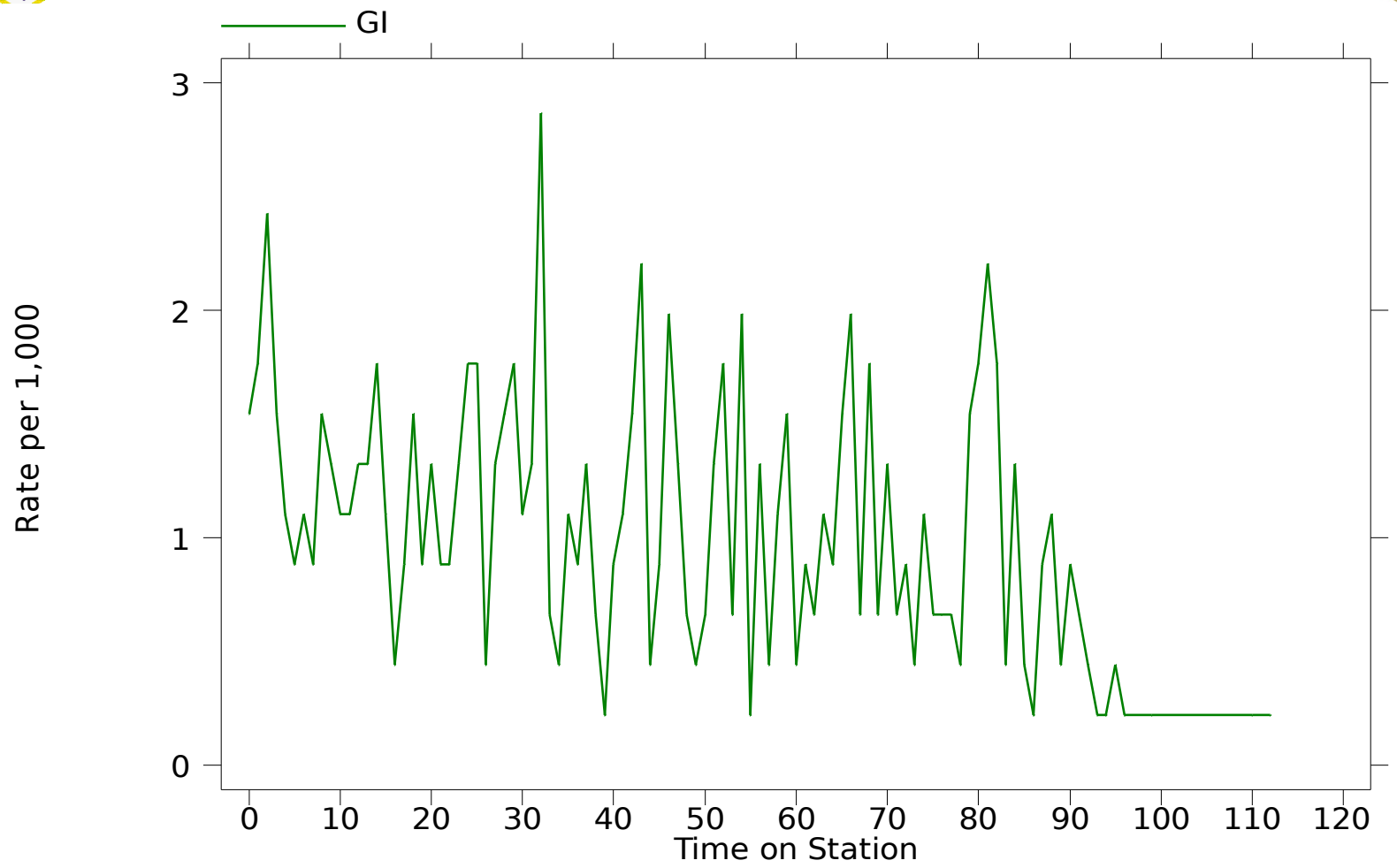
DNBI Variability

- **Rates vary:**
  - **By operation**
  - **By location**
  - **Over time**
  - **By time on station**

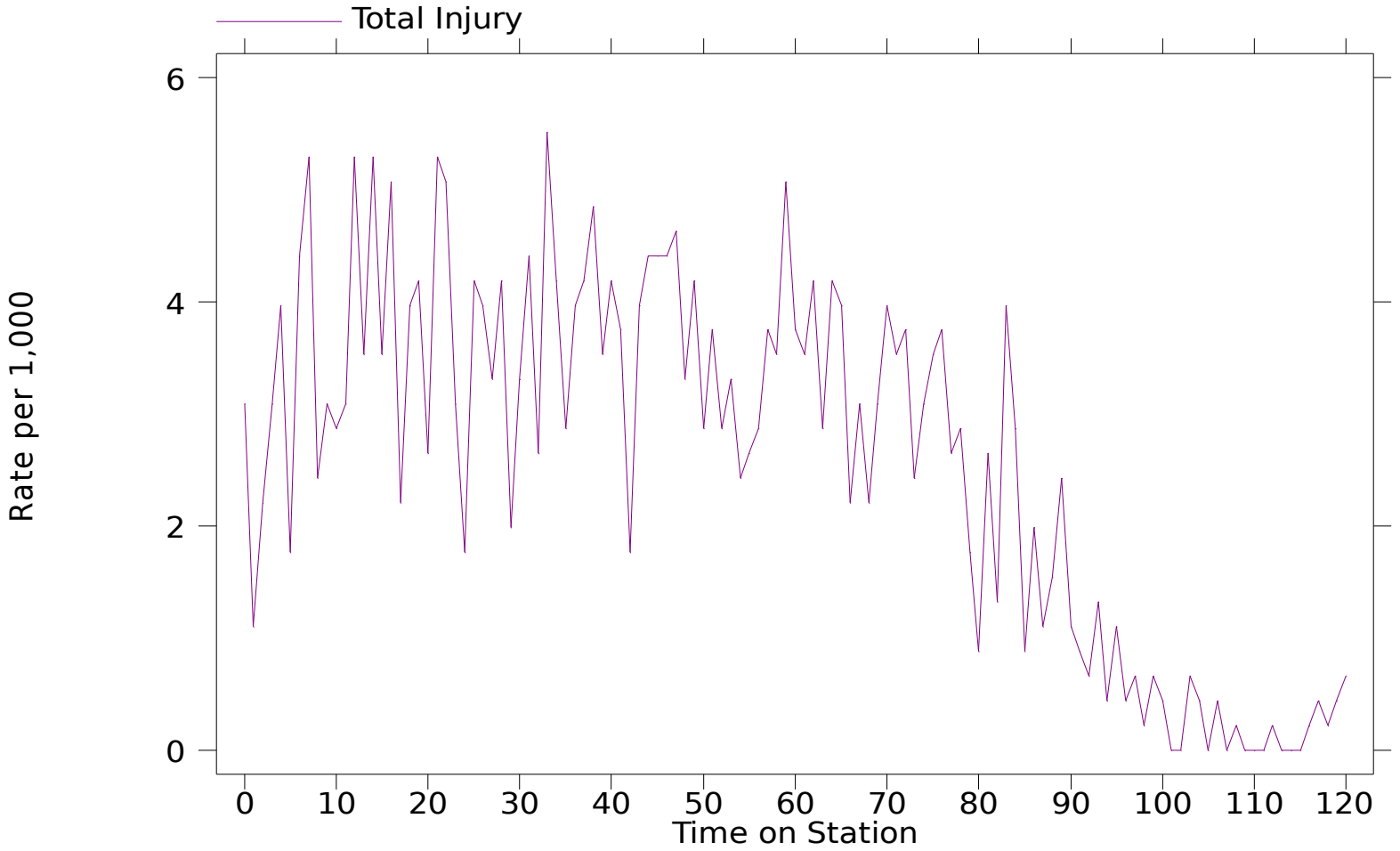
Derm by TOS


DERM
Rate per 1,000
0
2
4
6
0
10
20
30
40
50
60
70
80
90
100
110
120
Time on Station

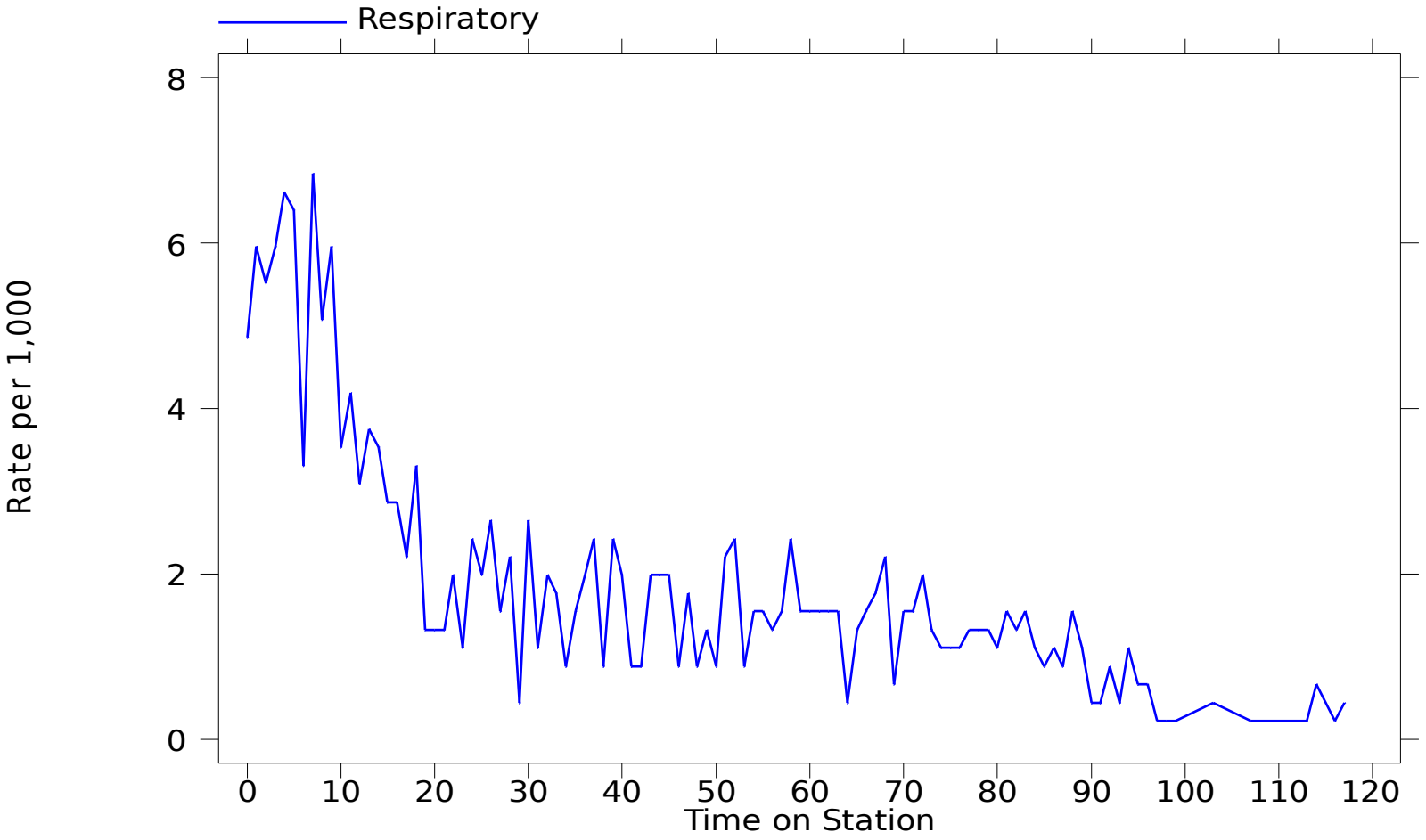
GI by TOS


GI
Rate per 1,000
0
1
2
3
0
10
20
30
40
50
60
70
80
90
100
110
120
Time on Station

Injury by TOS



Respiratory by TOS



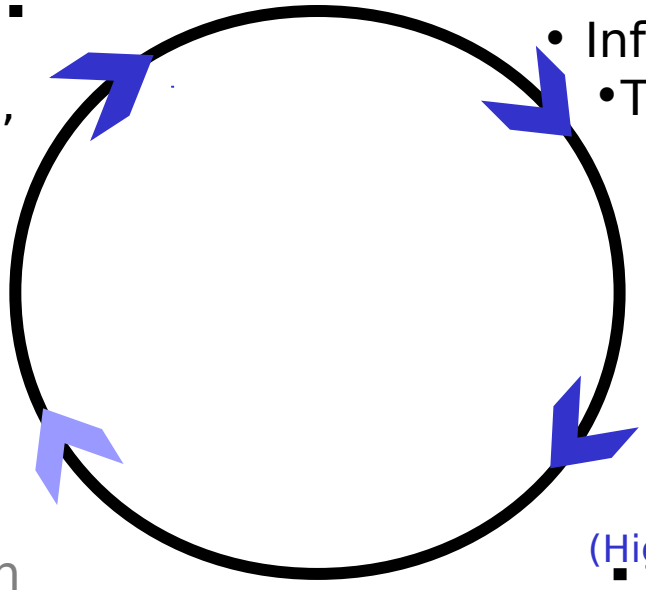
Surveillance During Deployments

Data Collection
(Geographically Separated Sites)

- Aggregate data (Army, Navy, Marine, CG)
- GEMS (AF)

Analysis and Interpretation
(AFIOH/Brooks AFB)

- Infectious Disease
- Trends over time
- Injury



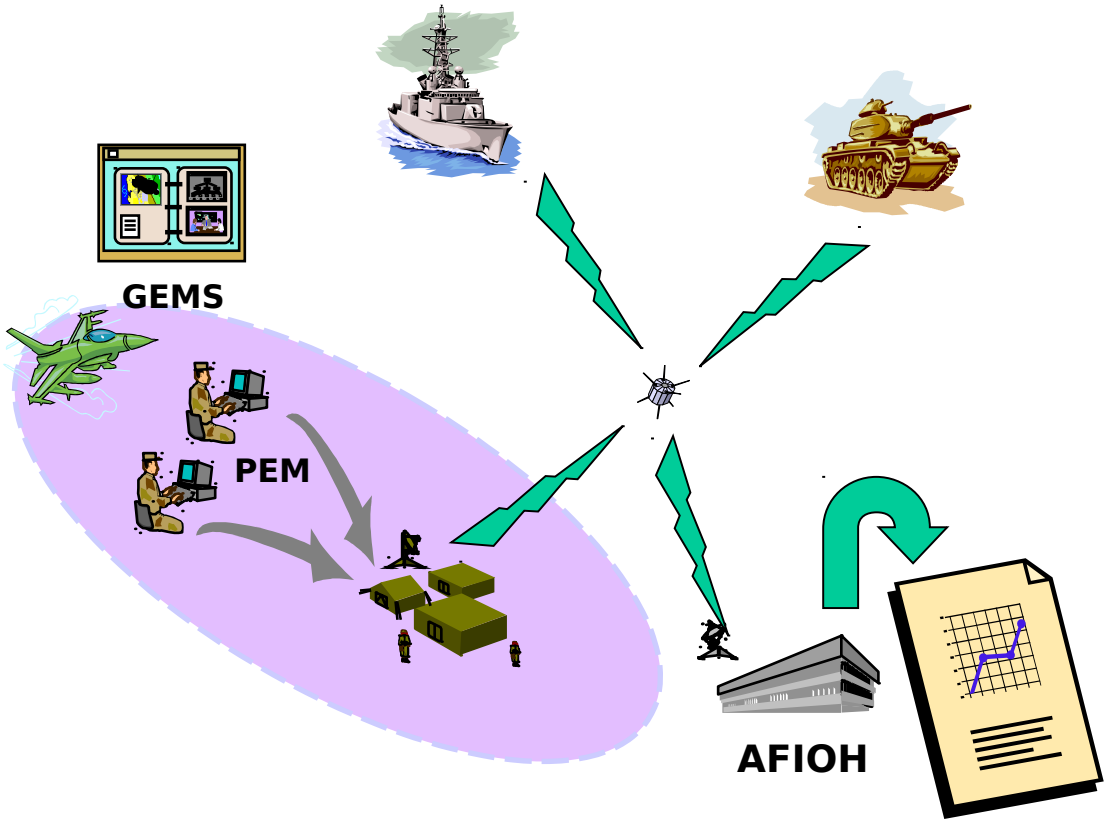
Action
(CENTCOM, JTF-SWA/SG, J-4/MRD, HA and AFMOA)

- Intervention
- Prevention
- Policy Change

Dissemination
(Higher authorities and GSUs)

- Weekly Reports
- Ad hoc queries

CENTCOM DNBI Data Flow



- Disease and non-battle injury surveillance for OEF/OIF
- Air Force, Army, Navy, Marine Corps
- Results classified—reports delivered to customers via SIPRNet

JCS DNBI Categories (Weekly Report)

- Combat/Operational Stress Reactions
- Dermatologic
- GI, Infectious
- Gynecologic
- Heat/Cold Injuries
- Injury, Recreational/Sports
- Injury, MVA
- Injury, Work/Training
- Injury, Other
- Ophthalmologic
- Psychiatric/Mental Disorders, not Combat Stress
- Respiratory
- STDs
- Fever, Unexplained
- All other Medical/Surgical
- Total DNBI

- Dental
- Misc/Admin/Follow-up
- Other locally defined

Special Surveillance Categories (Daily Report, 5-Line)

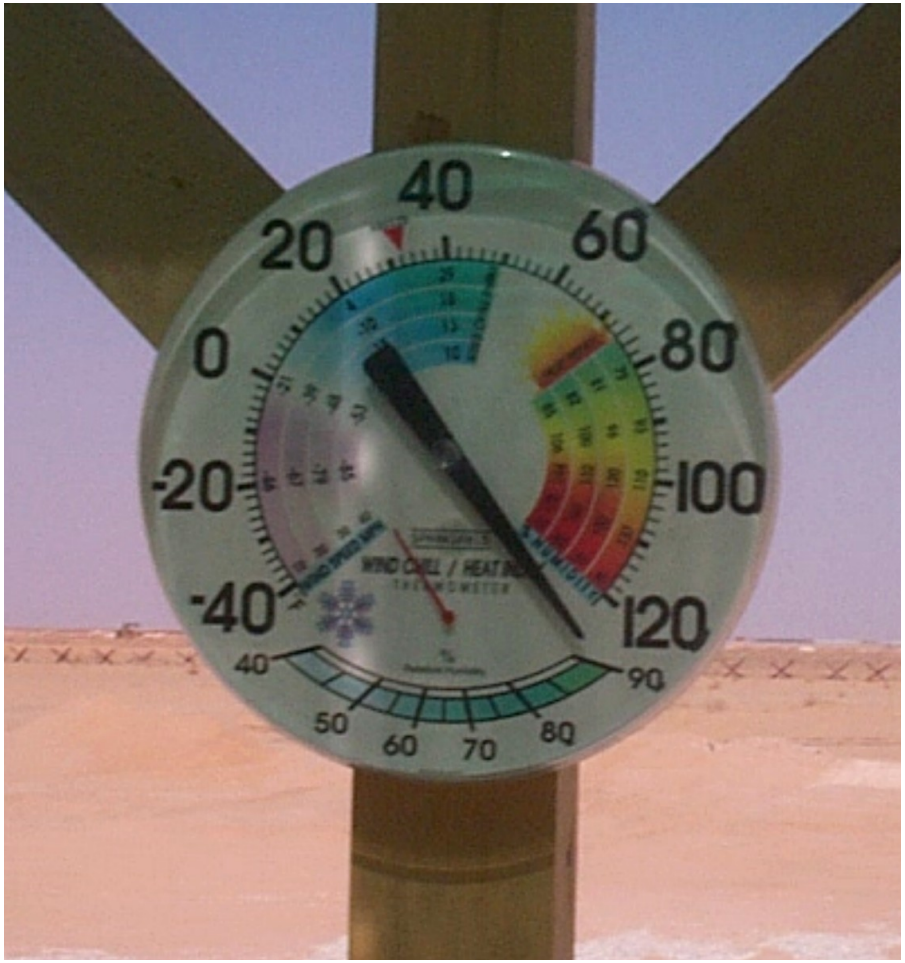
- **Fever**
- **Lower respiratory**
- **Gastrointestinal**
- **Dermatologic**
- **Neurological**

DNBI Reporting Issues

- **Standard case definitions, ICD9 mapping**
- **Initial visits vs follow-ups**
- **Population at risk**
- **Calculate rates**
- **Reporting timeliness, consistency**
- **Local analysis**

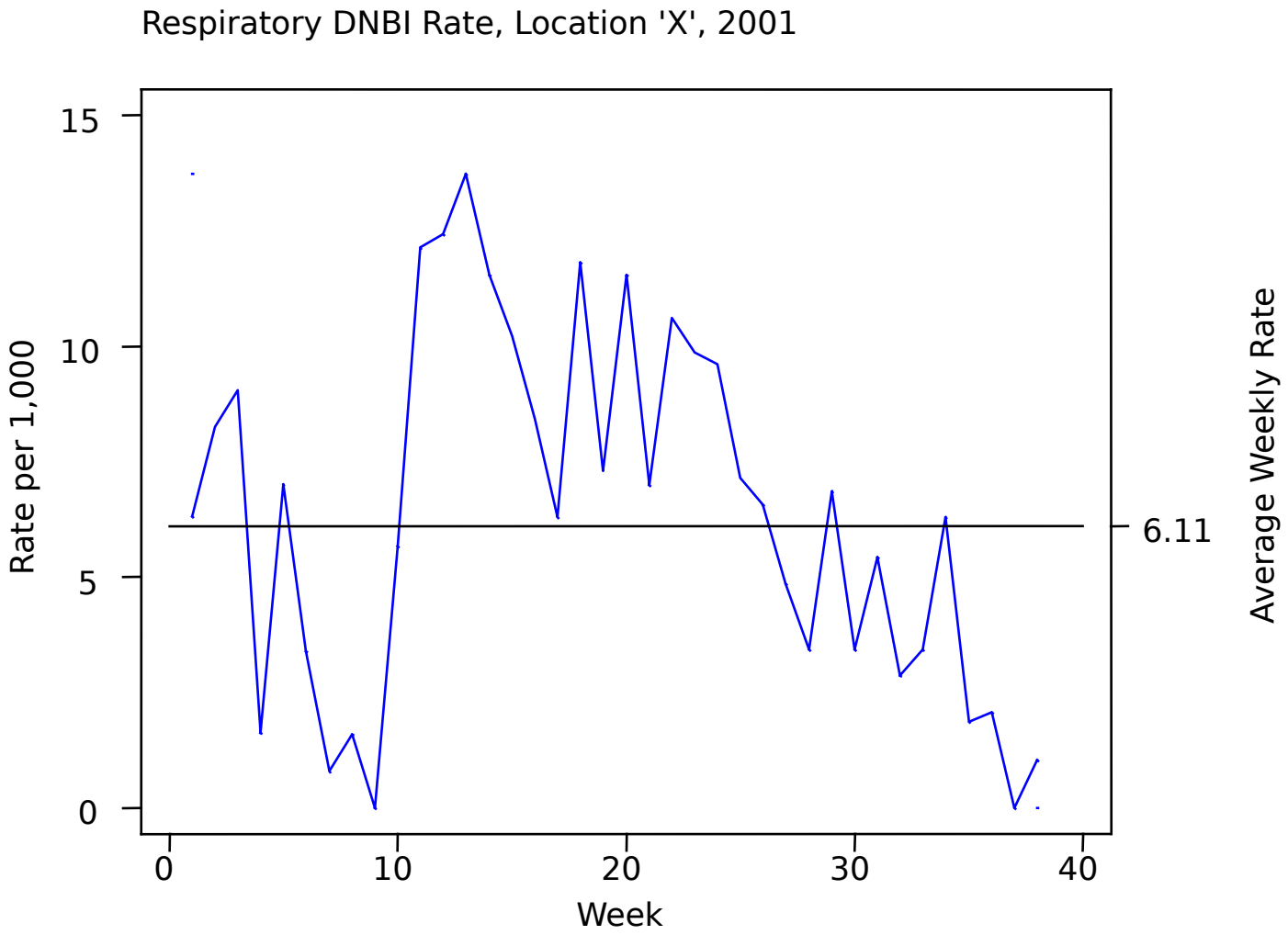
Analysis

- Collect the best data you can
- Convert to rates
- Use simple graphs
- Use common decision support tools

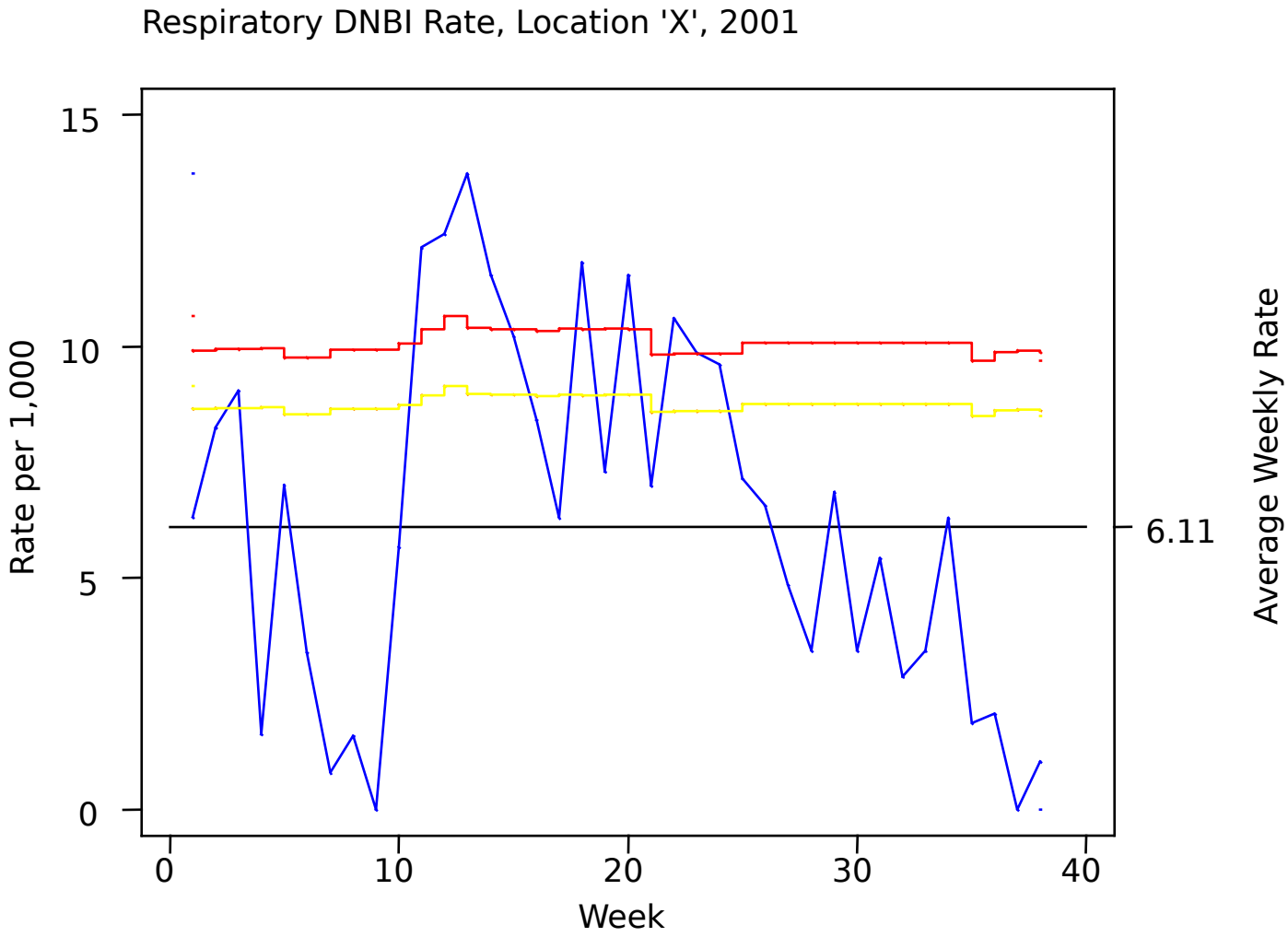


Start with a Trend

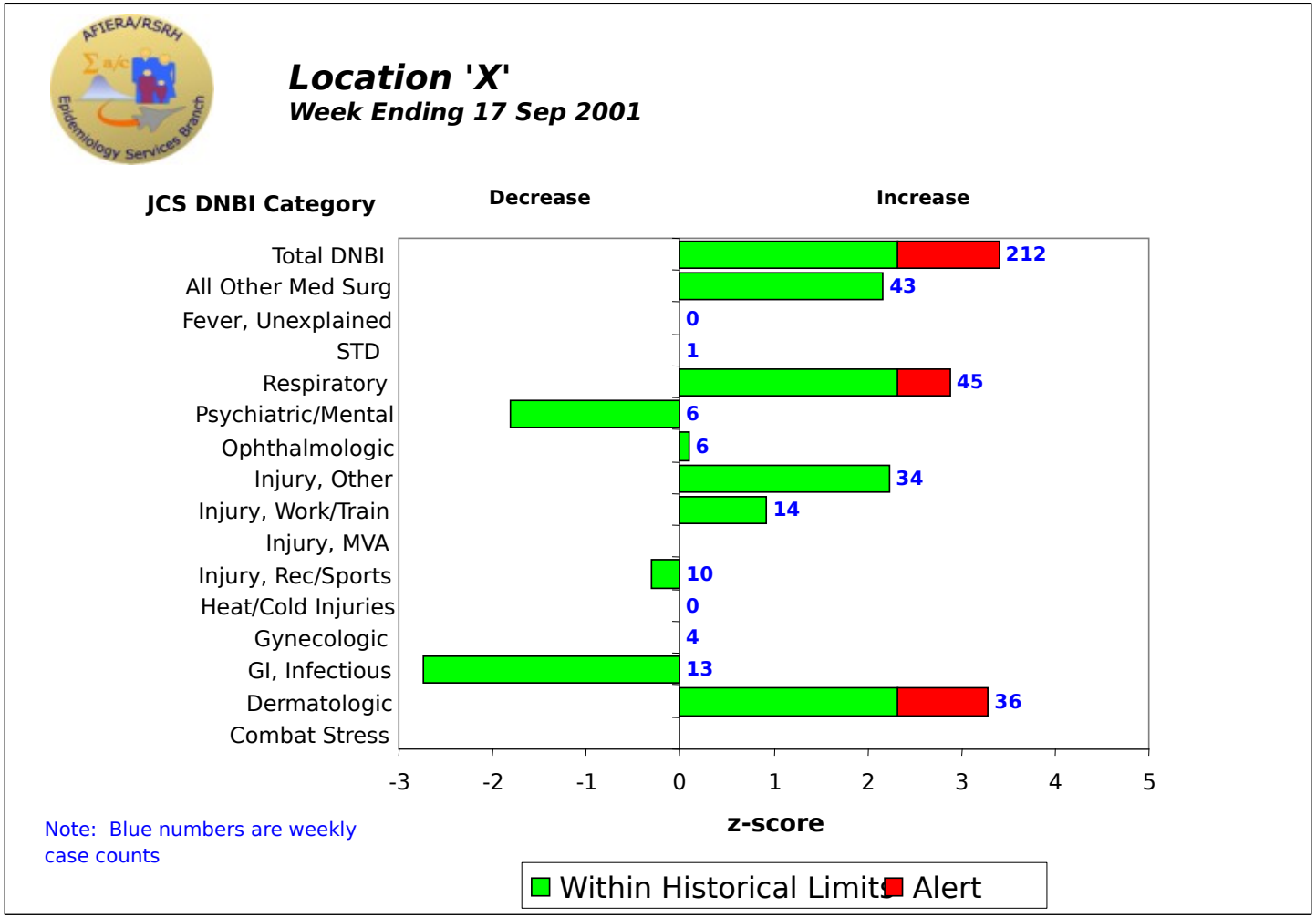
Add a Baseline



Add Thresholds



Graph "Current vs. Past Experience"



Note: Blue numbers are weekly case counts

What do you do with alarms?

- Confirm the excess
- Is it real?
- Look for more cases
- Look for commonality
- Review environmental data
- Define population at risk
- Develop and test hypotheses
- Execute control and prevention measures

Web Resources

- http://starview.brooks.af.mil/afioh/ AFIOH
- http://amsa.army.mil/AMSA/amsa_home.htm click "Deployments" then "Documents"
- http://www-nehc.med.navy.mil/prevmed/epi/ depsurv.htm
- http://deploymentlink.osd.mil/ select "Current Deployments" or "Past Deployments"
- https://www.brooks.af.smil.mil/afiera/default.htm AFIOH DNBI analysis products (SIPR)
- https://www.fhp.smil.mil JMeWS

Conclusions

- Deployment surveillance is important
- Data quality is an issue
  - Accurate case reports
  - Accurate force strength
  - Numerators must come from denominator
- Consistent reporting is essential!
- Statistics cannot replace vigilance and judgment
- Future – CHCS II Theater?

Operational Issues

- Handwashing
- Personal Protection from Arthropods
- Operational Logistics

Mobile Kitchen Trailer (MKT)

Questions & Comments